USEFUL AND ORNAMENTAL GOURDS

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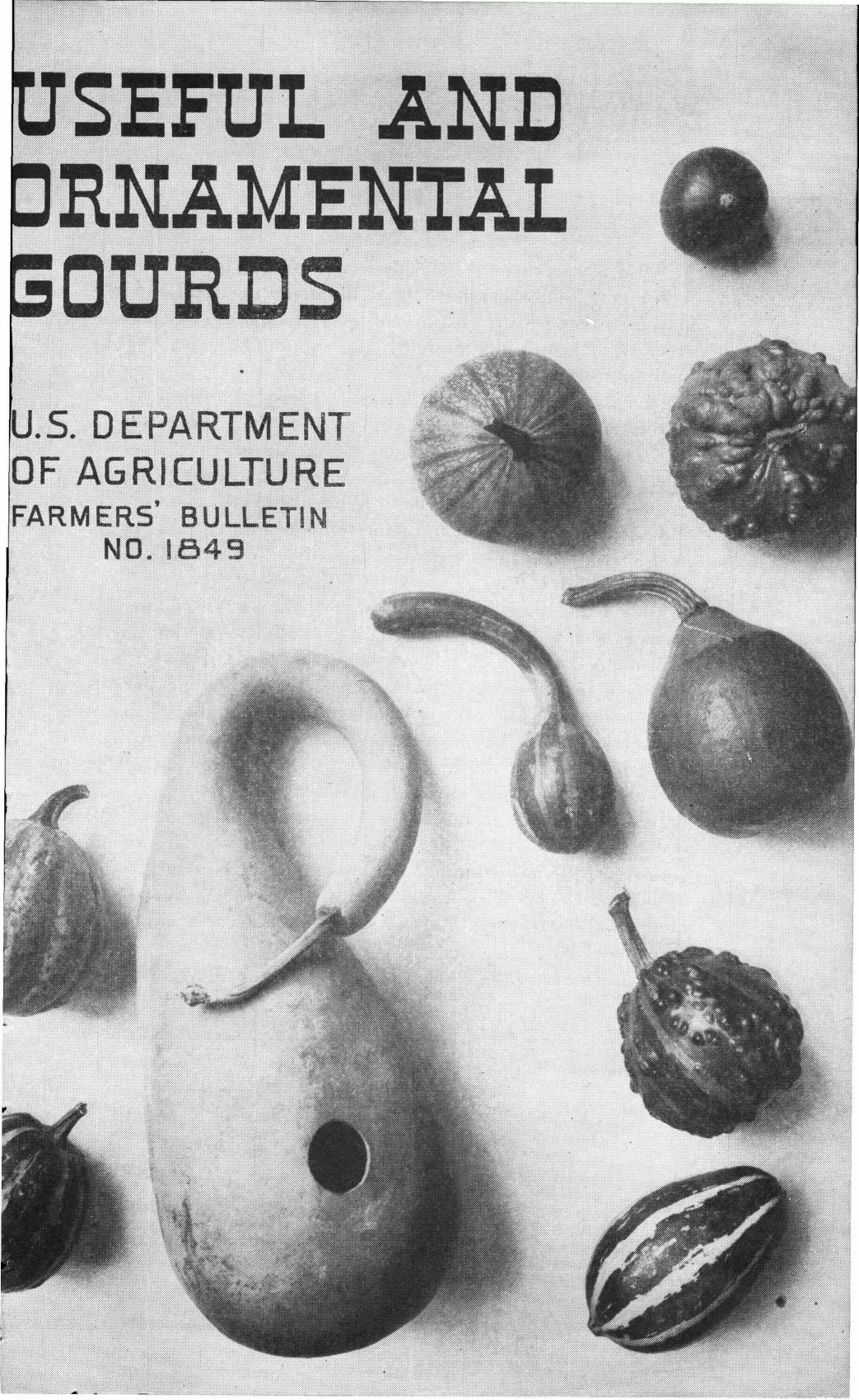

GOURDS are among the oldest cultivated plants. Utensils made from them have been found in the tombs of the ancients. Gourds are easy to cultivate; their foliage makes an excellent screen to hide unsightly objects, and their fruits serve many purposes.

Though mainly of tropical origin, gourds are adapted for cultivation over a wide area, including all of the warmer parts of the temperate zones. There are about 20 distinct species. The gourd is closely related to the pumpkin and the squash.

Gourds have the same general habit of growth as pumpkins and squashes and should have the same general cultural treatment, except that most species require some form of support or trellis to climb upon.

Among the most common uses for gourds are household utensils, such as dippers, spoons, ladles, salt and sugar containers, and many others. In olden times the large sugar trough gourds were largely used as containers for grains and various farm products. The sponge, or dishcloth, gourd is now produced and marketed on a large scale, and there is a constantly increasing demand for calabash gourds of the proper size and shape for the manufacture of calabash pipes.

Interest centers mainly, however, in the ornamental and decorative uses of gourds. The thin-shelled or hard-drying gourds are the most durable and are employed very largely for decoration. The thick-fleshed gourds are less durable, being more in the nature of squashes and pumpkins and almost as perishable.

This bulletin supersedes Leaflet 36, "Gourds for Bird Houses and Other Purposes."

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USEFUL AND ORNAMENTAL GOURDS

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Contents

GOURDS are among the oldest cultivated plants. Remains of gourds of the genus *Lagenaria*, so extensively used as utensils, have been found in Egyptian tombs of the Twelfth Dynasty, or about 2200 or 2400 B. C. Through all time of which we have authentic history, gourds have been used as ornaments, for making utensils of various kinds, including water flasks, dippers, and containers for stored grains, for bird houses,[1] and for many other purposes. Some kinds are used as food while young and tender, being prepared in the same manner as the garden varieties of summer or soft-shelled squashes.

At present there is widespread interest in gourds as ornamentals in gardens, especially in the many forms and colors of their fruits. Due to their ornamental value and ease of cultivation, gourds should find a more general use in gardens. The vines can be trained over arbors and serve as an excellent covering for unsightly objects, and because of their quick growth they are adapted for the temporary screening of backgrounds. Renewed interest in the use of gourds as nesting places for birds has resulted from the recent campaigns to increase the population of certain birds as a means of controlling insects.

The cultivation of gourds has become so popular that an international gourd society has been formed with headquarters in California. Seeds of the gourds that are more generally grown are carried by practically all seedsmen, but several seed dealers and gourd specialists are in a position to supply both the seeds and gourds of a large number of less common varieties and types.

GROUPS AND VARIETIES

Ornamental and useful gourds belong mainly to two groups. The first group, which is commonly cultivated in the Northern States (*Cucurbita pepo* var. *ovifera*), has rather coarse foliage and yellow flowers, which have little or no scent and bloom in the daytime. The fruits are mostly small, varied in color, inedible, and used mainly for ornaments, although some specimens are large enough to serve as houses for very small birds, such as the house wren and Bewick's wren. They are used also for making small utensils. Many varieties

[1] Information on birds supplied by the Fish and Wild-Life Service, Department of the Interior.

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of this group are listed by seedsmen under the names of pear, orange, egg, bicolor, Turk's turban, and others.

The second group, which is especially suitable for growing in the South, includes the larger-fruited *Lagenaria siceraria*, formerly *L. vulgaris*. These gourds have soft foliage and delicate, sweet-scented, white flowers that open at night. To this group belong such gourds as the siphon, African pipe, dipper, anaconda, bottle, calabash, Hercules-club, powder horn, kettle, spoon, and sugar trough. Many of them have odd shapes, varying from pear-shaped to long curved forms, some of which grow to be 5 or 6 feet in length. Ancient writers recorded specimens as large as 18 inches in diameter, 3 or 4 feet in length, and 80 pounds in weight. Most varieties grown by American gardeners are comparatively small, although specimens of the Hercules-club gourd that are 4 to 5 feet in length are frequently exhibited.

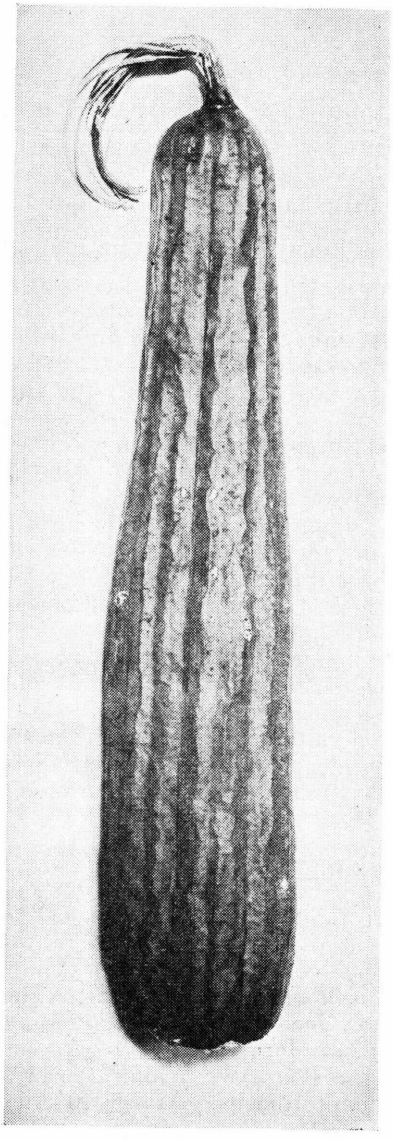

FIGURE 1.—The luffa, sponge, or dishcloth (dishrag) gourd.

The snake gourd belongs to another species (*Trichosanthes anguina*), a branch of the interesting and variable cucurbit family. The fruits of this gourd are long and slender, and many are coiled like a coiled snake. Frequently these fruits reach a length of 5 or 6 feet, but they are rather small in diameter. The snake gourd is a native of China, and in that country the young tender fruits are frequently used as food. It is a more or less bushy plant and for that reason is not so well adapted for screening purposes as many of the other gourds.

Another interesting group belonging to the genus *Luffa* is known as vegetable sponges, or dishcloth (dishrag), gourds (fig. 1). They are very ornamental, and the fruits, which are usually 1 to 2 feet in length, have a very well developed, fibrous interior, which may be used in place of a sponge or cloth for scrubbing and cleaning. The young fruits are also used as food in some countries. The *Luffa* group are natives of the tropical Old World, where they are used in many ways. *Luffa cylindrica* is the species most commonly grown in this country.

Another type of gourd that has recently attracted considerable attention is the wax gourd (*Benincasa hispida*). This gourd is a native of tropical Asia but is being grown throughout the warm countries of the world. The fruits are oblong or nearly round and 6 to 8 inches in length and, when they are immature, are covered with hairs and have a decidedly waxy appearance. The flesh is thick and is sometimes used as a cooked vegetable and for making preserves.

The balsam-pear (*Momordica charantia*) and the balsamapple (*M. balsamina*), although not true gourds, are included because of their adaptability for growing as porch screens and for covering summer-houses. Both are easy to grow, but they should not be planted until the weather and the soil are quite warm in the spring.

The so-called calabash gourds, from the stem end of which pipes are made, are in considerable demand by the manufacturers of pipes and cigar holders. The calabash is not a distinct species but belongs to the *Lagenaria* group, along with the dipper gourds and others of that class. The calabash gourd has the characteristic of growing with a curved stem, the main or large portion of the gourd being cut off in the making of the pipes and only the curved or stem-end portion used. In order to be suitable for

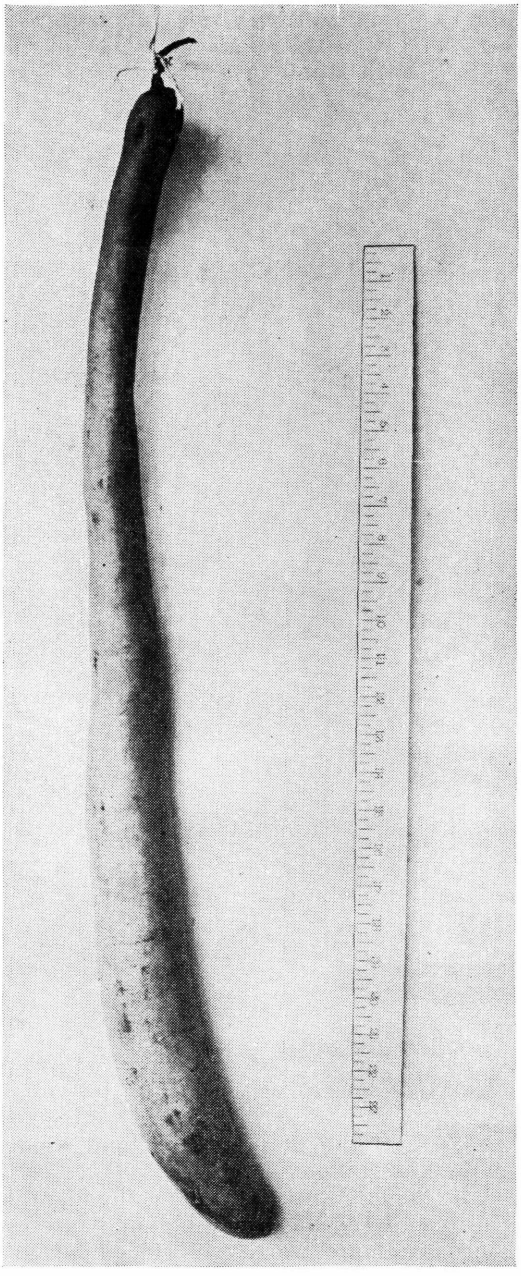

FIGURE 2.—Italian edible gourd.

making pipes, the calabash gourds must be fully matured, and this requires a rather long season for their growth. For this reason they are adapted for growing primarily in the Southern States.

The Italian edible gourd (*Lagenaria leucantha* var. *longissima*) (fig. 2) is very similar to the Indian club or Hercules-club gourd, but it is used very largely in Italy for food. The average length is about 2 feet by 2½ inches in diameter. The color is light green when the gourd is

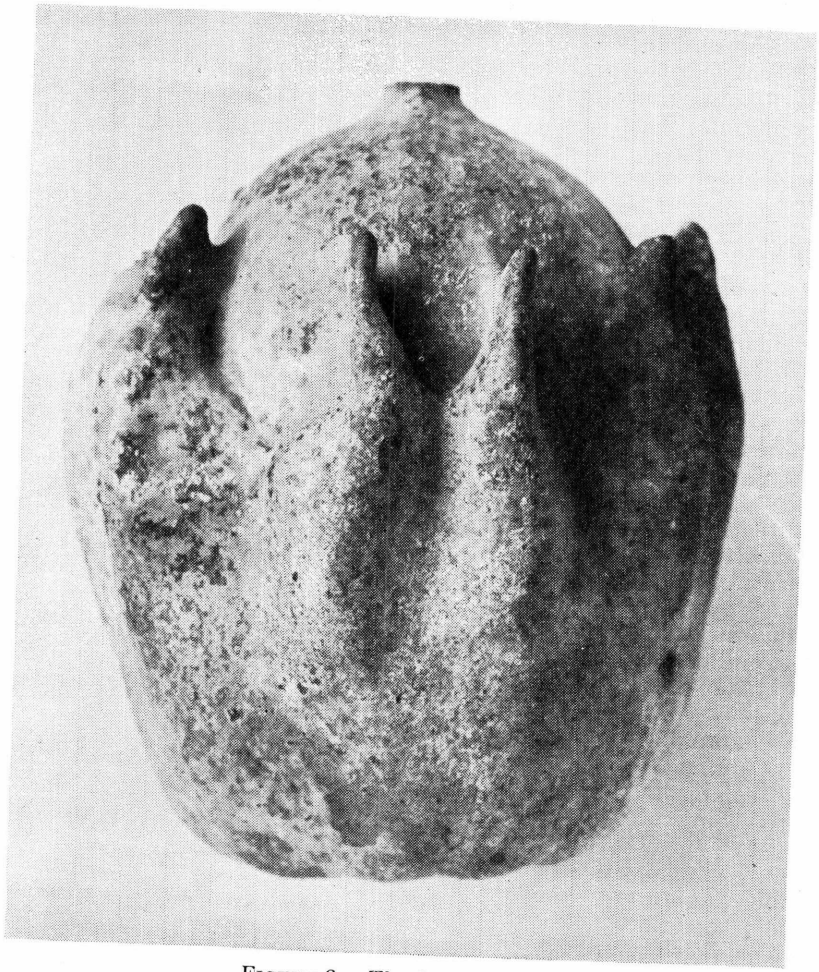

FIGURE 3.—The finger gourd.

young, and the flesh is thick and tender. It is used in the same manner as summer squash.

The finger gourd (fig. 3) and the maranka, or dolphin, gourd (fig. 4) are two of the most peculiar and interesting types. They are true gourds and are worthy of consideration wherever variety and odd types are desired.

The dudaim melon (*Cucumis melo* var. *dudaim*), also called *Cucumis*

odoratissimus because of its rather strong but pleasing odor, is a small melon rather than a gourd, although it is frequently included in gourd collections. It grows on the ground like an ordinary muskmelon, and

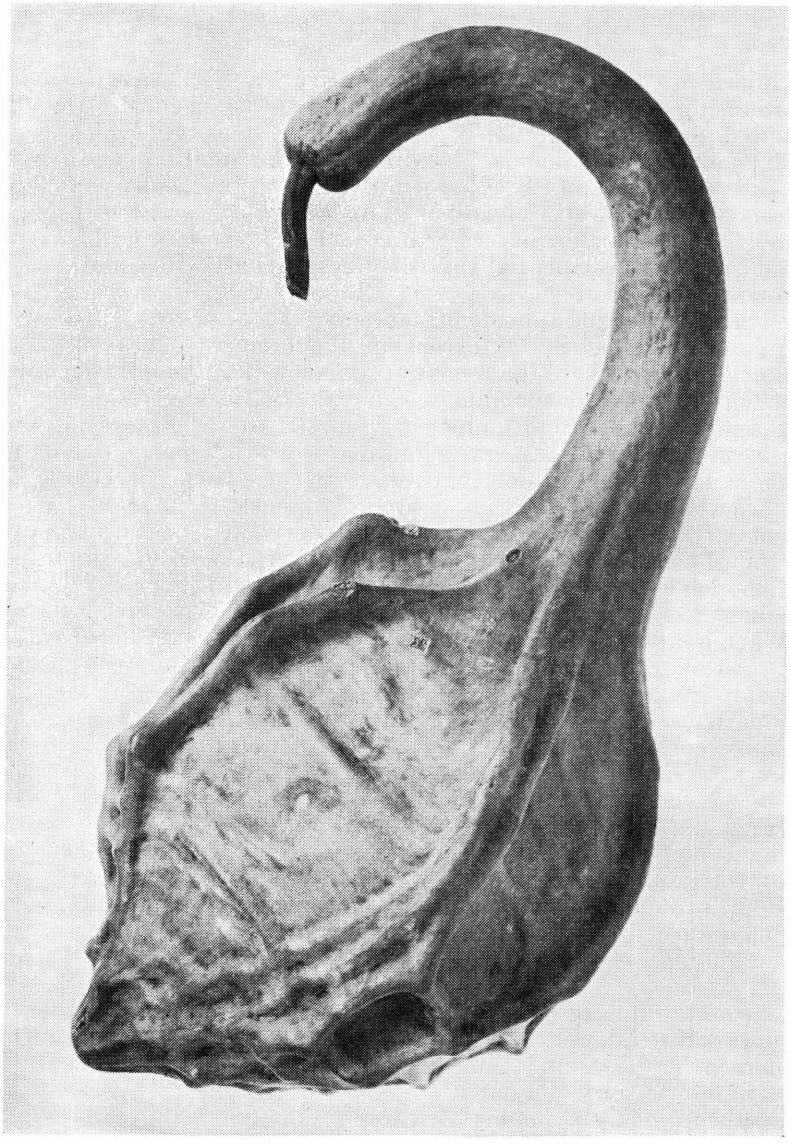

FIGURE 4.—Maranka, or dolphin, gourd.

its small, orange-shaped, attractively colored fruits are highly prized as ornaments.

The squirting-cucumber (*Ecballium elaterium*) is neither a cucumber nor a true gourd, but because of its odd character it is frequently

grown in gardens. The vine does not have tendrils, nor does it climb, and the fruits, which are hidden under the foliage on the ground, when ripe, will squirt or eject their seeds and juicy pulp with considerable force from the stem end at the slightest touch.

CULTURE

Gourds are comparatively easy to cultivate. Because of their close relationship to cucumbers and squashes, soils and cultural methods adapted to the production of these crops usually give good results with gourds. Commercial fertilizer in combination with rotted manure will be found suitable for providing the necessary plant food. The quantity of fertilizer and manure that may safely be used will depend upon the fertility of the soil, but because gourds make a rapid growth, it is essential that they be provided with an abundance of plant food.

Gourds are tender annuals but are adapted for planting throughout continental United States except in the extreme northern portion and at altitudes where the temperature is low and the growing season too short for their development. They do well in a climate where the day temperature in midsummer is from 70° to 85° F. and the night temperature only a few degrees lower. A growing season of 140 days or more is required for their maturity. In some localities where gourd culture would otherwise be impossible, the seeds may be started indoors in pots or plant bands and the seedlings transplanted to the open on the arrival of warm weather. In most localities the seeds may be planted in the open as soon as all danger of frost is past. However, the young seedlings are very tender and easily injured by cold.

When gourds are grown commercially the rows are usually spaced 7 to 9 feet apart with the plants 4 or 5 feet apart in the row, although they are frequently planted in hills 8 or 9 feet apart with two or three plants in each hill. For best results the vines should be trained on trellises, consisting of lines of posts with three to five wires for the vines to climb upon. Gourds are also grown on arbors consisting of posts with crosspieces and numerous overhead and side wires for supporting the vines. Where the gourds are grown on the ground without supports they are often stained at the points where they rest upon the ground.

Gourds require a reasonable amount of moisture and should be watered during periods of dry weather. Toward the end of the season water should be withheld in order that the gourds may ripen before frost.

The cultivation of gourds is limited mainly to keeping down weeds. Gourds are relatively shallow-rooted, and for that reason cultivation should never be deep. When the gourds are not making sufficient growth they can be stimulated by light top dressings of nitrate of soda and other quickly available fertilizers.

DISEASES AND INSECTS [2]

Gourds are subject to injury from the same diseases and insects that attack cucumbers and muskmelons.

[2] The portion relating to insects was supplied by the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture.

DISEASES

Gourds are subject to a number of diseases, but as a rule the disease-control problem with gourds is not as difficult as with melons and cucumbers.

Certain of the leaf spots occasionally give trouble, but downy mildew is more prevalent. Spraying the plants with bordeaux mixture is perhaps the best remedy, but it should be considered more of a preventive rather than a cure for fungus leaf diseases. The ready-prepared bordeaux mixture may be purchased and the water added as indicated on the package. A 2–4–50 bordeaux mixture can be made in small quantities by dissolving 2 ounces of copper sulfate (bluestone) in 1½ gallons of water and at the same time mixing 4 ounces of hydrated lime with another 1½ gallons of water. After both are thoroughly prepared, the two should be poured together. This makes 3 gallons of bordeaux mixture. It should be used immediately, as it deteriorates with age. In case any melon aphids are present on the foliage, 3 teaspoonfuls of nicotine sulfate may be added to 3 gallons of bordeaux mixture.

Gourds are subject to certain wilt diseases, which may be largely avoided by planting the gourds in a different location each year.

STRIPED CUCUMBER BEETLE

The striped cucumber beetle is especially troublesome just as the gourd seedlings emerge from the ground, when the beetle feeds upon the tender seed leaves and the stems. The latter are attacked below the surface of the soil where cracks in the soil offer means of entrance to the beetles. Prompt control measures are essential. One of several dust mixtures may be used to protect the plants from attack. Gypsum and calcium arsenate, 15 pounds of the former and 1 pound of the latter; rotenone-bearing dust containing 0.75 percent of rotenone; or a nicotine dust containing ¼ pound of 40-percent nicotine sulfate to 4¾ pounds of hydrated lime may be used.

Careful attention should be paid to the planting. When the first insect is observed the insecticide should be applied immediately. Many growers prefer to dust when the young plants are cracking the surface of the soil, and this practice is the safest to follow. Since the beetles migrate to the fields almost continuously for several weeks, applications should be repeated at frequent intervals, at least until the plants begin to vine.

MELON APHID

Gourds are frequently attacked by the melon aphid, a small louse-like insect which obtains its food by sucking the plant juices. It feeds mostly on the under side of the leaves and, when abundant, causes the leaves to curl, lose color, and finally die. The aphids start in the early part of the season as small colonies on the under side of the leaves, and unless checked they soon spread to cover the entire plant. Dusting with nicotine dust as described for the control of the cucumber beetle is perhaps the most effective method of controlling this pest. Spraying with the nicotine sulfate solution is also effective, but it is more difficult to reach the under side of the leaves with a spray than with a dust. If the plants have begun to run, it is necessary for one person to lift each runner while another applies the spray.

It must be borne in mind that it is essential that the spray or dust actually strike the body of the insect.

For small quantities of the spray, use 1 teaspoonful of nicotine sulfate and 1 ounce of soap (1-inch cube, or 2 level tablespoonfuls of soap flakes) to 1 gallon of water. The object of the soap is to make the spray adhere to the plants, and more soap is required with hard water than with soft water. First dissolve the soap in the water, using heat if necessary, then, after the water has cooled, add the nicotine sulfate.

SHAPING

Gourds may be made to grow in odd shapes by tying bands of soft tape around them. The shape of the snake gourd may be changed by frequent but gentle bending of the young fruits with the hands. The stem ends of calabash gourds may be tied so as to give the desired curve or shape for pipes. As a novelty, gourds are sometimes grown inside of glass flasks or bottles to mold their shape; then before maturity the bottles are carefully broken off, leaving the gourd to mature in its unusual shape.

GATHERING AND CURING

Frequent inquiry is made as to the best methods of curing gourds. The usual test of maturity of the thin-shelled gourds of the dipper type is, first, the changing of the green color to a light brown. At the same time the shells begin to harden, the fruits become lighter in weight, and the tendrils on the vines near the gourds begin to shrivel and dry. Where it is desired to have gourds of a curly-maple appearance after they are finished, they should not be gathered until after the vines are killed by frost. However, they should not be subjected to hard freezing. For gourds of a tan or mahogany color the fruits should be cut with long stems before frost and hung to dry in a well-ventilated place. For best results the gourds should cure slowly, and it is not uncommon for those of the *Lagenaria* group to be 6 months or a year in curing. In contrast, the *Cucurbita* type of gourd, or those having thick flesh, must be gathered before the first frost, but the rinds should be hard, and the stems should have started to shrivel before the gourds are picked. Gourds of this type are more difficult to cure than the thin-shelled ones; after being bright-colored for 3 or 4 months, they usually begin to fade; their beauty is of short duration. All types of gourds should be handled carefully, as bruises will sooner or later discolor and cause them to soften and decay.

Where large quantities of gourds are being cured they are frequently placed in open fruit crates or spread on slatted shelves in a building where free ventilation can be maintained. The use of artificial heat has a tendency to cause molding and spoilage. In some cases the gourds are cured in crates in the open with some form of roof over them to shed rain, but provision should be made to protect them from freezing. If only small numbers of the large thin-shelled gourds are being cured, a loop of string or copper wire can be attached to the stem of each and the gourds hung to nails driven in the joists or rafters of an open shed or outbuilding. The small or fleshy gourds may be placed in open-mesh bags, such as are used for onions, and hung in a well-ventilated room for curing.

When the gourds are first gathered they should be thoroughly

washed in some disinfectant such as bichloride of mercury at the rate of one 7½-grain tablet to a pint of water or dusted with a disinfectant material to prevent the development of molds. If the gourds are washed they should be wiped dry with a clean cloth and then cured.

It should be remembered that bichloride of mercury is a deadly poison and should be handled with extreme care. Any of the solution that is left after treating the gourds should be poured into a hole in the ground and covered.

PREPARATION AND USES

Gourds of the thin-walled or dipper type can be easily cut or carved when mature but not thoroughly dried, as the interior then consists of seeds and a small amount of fibrous material. Cutting a hole of the desired shape and size is an easy matter while the gourd is a little green, and drying will be facilitated by the admission of air through the opening. If well cleaned and dried, gourds of the dipper type are firm, light, and very durable, lasting several seasons when exposed to the weather or when used as utensils, provided they are not subjected to heavy strain or abuse.

Most commonly gourds are used as household ornaments, homes for birds and small animals, or containers or household utensils. In the United States they are used mainly for ornamentation and bird houses. In some parts of the world gourds are of great value, entering into the everyday lives of the people as household utensils, chiefly drinking cups (fig. 5) and containers for dry foods, although some varieties are used as cooking vessels. The large or sugar-trough type of gourd is used for carrying and storing water, for receptacles in

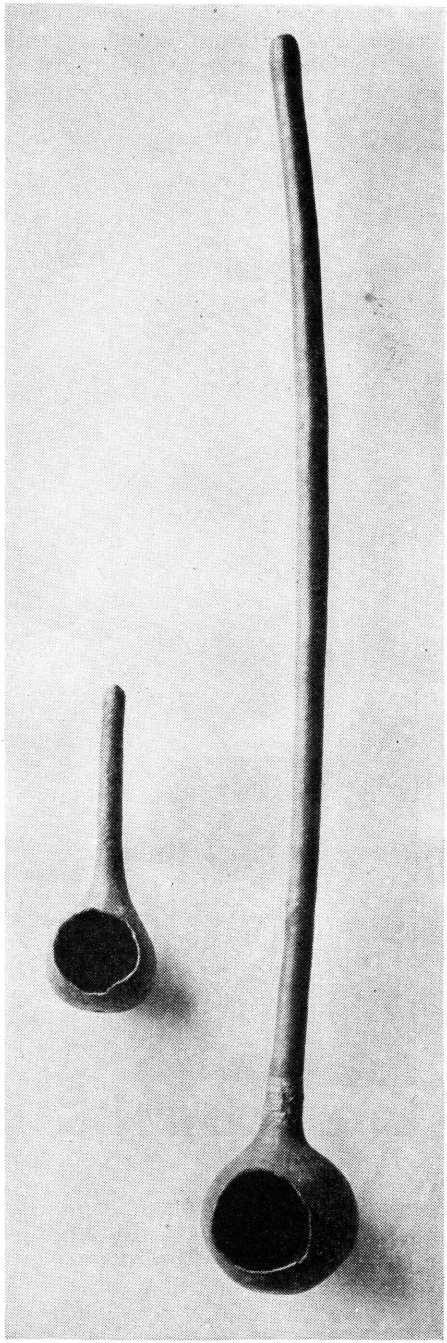

FIGURE 5.—Gourd dippers.

which to handle grains, fruits, and vegetables, and as general containers on farms. Gourds of the spoon, dipper, and bottle types make excellent nesting quarters for certain birds, because they are weatherproof and can easily be made ready for use and fastened in place; furthermore, they are so easily and cheaply grown that they make very inexpensive nesting quarters. In the Southeastern States especially, groups of gourds put up for purple martin nests are a

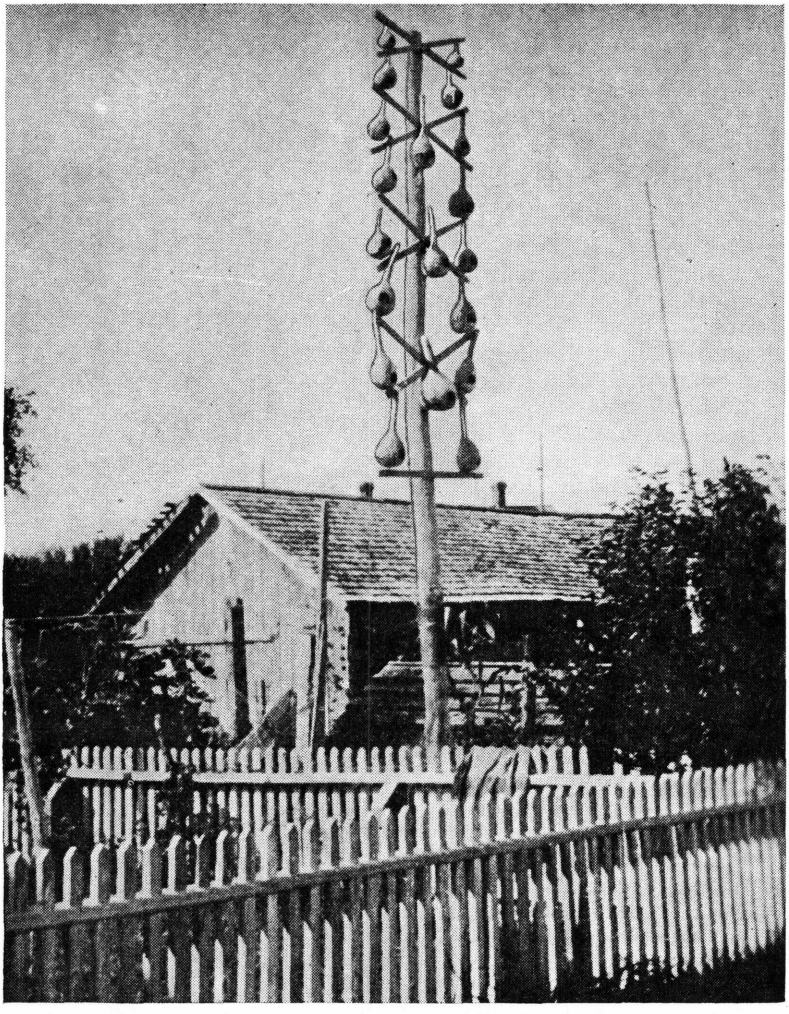

FIGURE 6.—A neat battery of gourds for purple martins.

common sight (fig. 6). The gourds, after having the proper holes cut in them, are wired to the bare branches of a tree or to cross arms on a tall pole. As a rule the supports are located at a distance from leafy trees, buildings, or other objects of about the same height in order that the martins may have a clear view and unobstructed flying space. Copper wire, 16-gage or larger, is best for fastening the gourds, because it does not rust and will hold them firmly in place indefinitely.

The use of gourds as homes for birds need not be restricted to martins; for other birds the gourds may be fastened singly to trees or to posts where they are likely to be occupied. Principles to be observed in placing bird houses are discussed in Farmers' Bulletin 1456, Homes for Birds. To insure a variety of tenants the entrance holes should be of various sizes in proportion to the size of the gourd. Holes in gourds intended for house or Bewick's wrens should be 1 inch in diameter; for the chickadee and Carolina wren, 1⅛ inches; for the downy woodpecker, tufted titmouse, and white-breasted nuthatch, 1¼ inches; for the hairy woodpecker, bluebird, and tree swallow, 1½ inches, for the crested flycatcher, 2 inches; and for the flicker and purple martin, 2½ inches. Entrance should be well above the bottom of the gourd, not only to give space for nesting material but to prevent fledglings from leaving the nest prematurely. Holes may be marked with a compass and cut to exact size with an expansion bit or a fine keyhole saw, but in any case they should not vary much from the size indicated for the bird desired. The flicker needs quarters about 7 inches on all inside dimensions, the purple martin, 6, the bluebird, 5, and the house wren, 4.

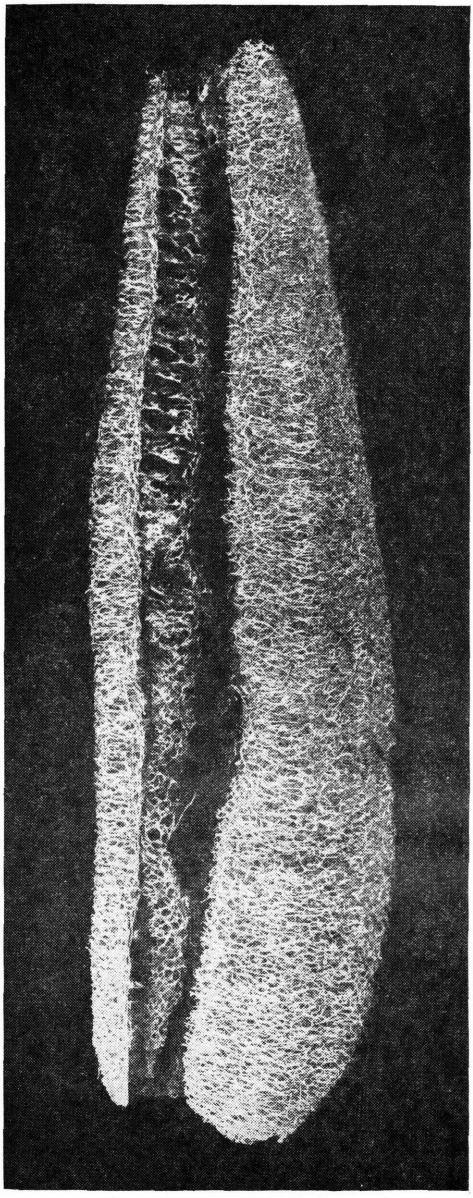

FIGURE 7.—Vegetable sponge or dishcloth made from luffa, or sponge, gourd.

If it is not convenient to clean the gourd through a hole of one of the smaller sizes specified, the large end of the gourd may be sawed off, the interior cleaned out, and the altered gourd wired to a bit of board of appropriate size, or the bottom portion of the gourd may be replaced and fastened with wires. All gourds used for bird houses should have a few small holes bored in the bottom for drainage. Gourds that last over winter

in good condition will be more inviting to birds if thoroughly cleaned in advance of the nesting season.

PREPARATION OF SPONGE GOURDS

The luffa, or sponge, gourds should remain on the vines until they are ripe or until the vines are killed by frost. After gathering, the gourds may be treated in a number of ways to remove the outer covering and the pithy material that fills the spaces of the fibrous interior. The outer coverings of sponges may be removed by exposing them for a time to the weather, but bright-colored, attractive sponges can seldom be produced by this method. For best results the gourds should be soaked in tanks or tubs of water until the outer covering and the pith soften. When sponges are produced in large quantities, the gourds are placed in coarse-mesh bags or in crates and are submerged in a stream until completely softened. Some growers pack the gourds loosely in boxes and cover them with wet bags to maintain the moisture necessary for softening them. When the gourds have become thoroughly softened, the outer covering and the pithy material can be removed by rubbing them together or by means of a brush, care being taken not to injure the sponge itself. As a final operation the sponges should be washed through several changes of clean water and then dried.

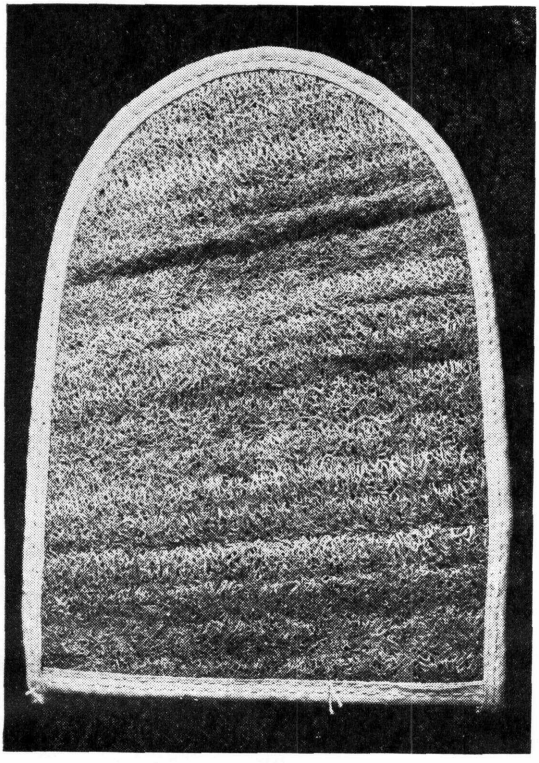

FIGURE 8.—Bathcloth or washcloth made from a section of a sponge gourd bound with tape to protect the raw edges.

Figure 1 shows a sponge gourd before the rind and fibers are removed, and figure 7 shows a finished sponge. Figure 8 shows a washcloth made from a section of a sponge gourd, with the edges bound with tape.

SAVING SEEDS

Gourd seeds can be saved in the same manner as pumpkin or squash seeds. They may remain in the gourds until thoroughly cured; then, as holes are cut in the gourds to form bird houses, dippers,

or special ornaments, the seeds may be removed, cleaned of the fiber to which they are attached, and kept in a dry place until wanted for planting. Like those of pumpkins and squashes, the seeds of most gourds retain their power to germinate or grow over a period of about 4 years and sometimes longer if kept dry.

ORNAMENTATION OF GOURDS

In addition to using gourds for many domestic and practical purposes, there has been a great revival of interest in carving and decorating them. Their ornamentation is as old as history itself; rare specimens recovered from ancient tombs show a high standard of art in carving and painting.

Only gourds that have reached complete maturity and been fully cured should be selected for decorating. The initial step is the thorough cleaning and polishing of the outer surface either by scrubbing with steel wool or sandpapering with a very fine grade of sandpaper. The scrubbing process is preferable usually, as it removes the thin outer skin without leaving any marks or abrasions. The surface of a well-matured gourd of the hard-shelled type is capable of taking a very high polish, almost like that of mahogany. Where the outer surface is scrubbed with steel wool the gourds should be wiped dry with a soft cloth and then thoroughly dried before any further work is done upon them.

There is almost no end to the designs that may be employed in the ornamentation of gourds. However, the type and shape of the gourd often suggest its proper treatment. First the design should be traced upon the polished gourd, after which the cutting can be done with very sharp carving tools, or the design may be burned into the surface of the gourd by an electric needle. The various processes involved in ornamenting gourds are too elaborate for adequate description in a publication of this nature, but the results depend very largely on the artistic skill of the person doing the work. Growing and decorating gourds is a highly fascinating pastime that is being indulged in as a hobby by many professional people, who either grow their own gourds or procure them from some person who has the facilities for growing them.

As the final operation in ornamenting any gourd, the surface should be given a light rubbing with a very high grade transparent furniture wax. This forms a thin coating that excludes the air and preserves the gourd. The wax should be renewed every few months in order to maintain the polish and a smooth surface. About all that can be done with the fleshy gourds is to dry them properly and keep them where they will be reasonably warm and have free circulation of air. If the fleshy gourds are wrapped closely or stored in boxes where they do not get air they will mold in a short time. These gourds are best adapted for filling ornamental baskets and for making charm strings to be hung at the threshold. These charm strings may also include other articles such as pine cones, brightly colored peppers, seed pods of various kinds, and a slight mixture of dried herbs to add perfume.

There are a number of books available on the subject of gourd culture, one of which, The Garden of Gourds, by L. H. Bailey, is of particular interest to students. Another little book, The First Gourd Book, by Helen M. Tillinghast, is of special interest to all those who desire information on the culture, decoration, and arrangement of gourds.

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